Owner's Guide

CASCADE®
CONTINENTAL®-STYLE
HANDPIECE CONTROL SYSTEM

a-dec®

85.2608.00

Warranty Information

Serial Number _____

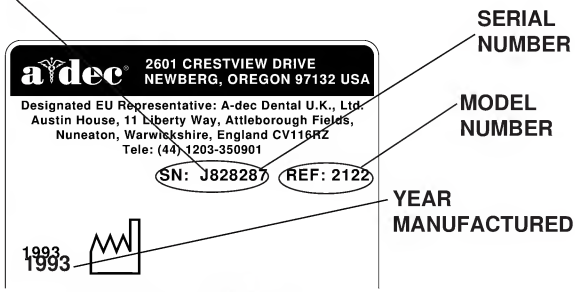
Model Number _____

Date Purchased _____

Date of Service	Model/Description of Service	Technician's Initials

ALPHABETICAL EQUIVALENT TO THE NUMERAL OF THE MONTH MANUFACTURED

A	January
B	February
C	March
D	April
E	May
F	June
G	July
H	August
I	September
J	October
K	November
L	December



SERIAL NUMBER IDENTIFICATION

Continental Handpiece Control System
Serial Number Location:

- Underneath the control head near the air pressure gauge

For service information contact your local authorized A-dec dealer.

Check with local codes and A.D.A. (Americans with Disabilities Act) Requirements for Installation of this product.

A-dec warrants its products against defects in material or workmanship for one year from time of delivery (except for handpieces which have a warranty period of six months). A-dec's sole obligation under the warranty is to provide parts for the repair, or at its option, to provide the replacement product (excluding labor). The buyer shall have no other remedy. (All special, incidental, and coincidental damages are excluded.) Written notice of breach of warranty must be given to A-dec within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from use of cleaning, disinfecting or sterilization chemicals and processes. The warranty also does not cover light bulbs. Failure to follow instructions provided in A-dec's Operation and Maintenance Instructions (Owner's Guide) may void the warranty.

NO OTHER WARRANTIES AS TO
MERCHANTABILITY OR OTHERWISE ARE MADE

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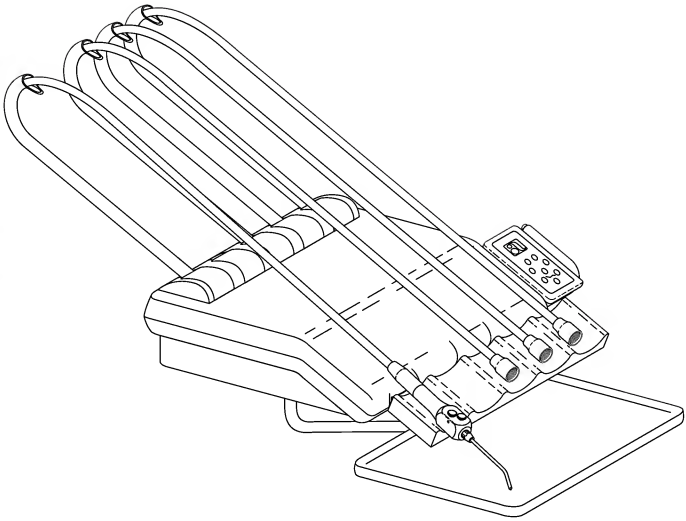

Cascade Continental Handpiece Control System (shown with optional touch pad and push button arm brake)

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About Your Control System

Your Cascade Continental-style Handpiece Control System is an arm-mounted control, built around A-dec's Century Plus® control system for three handpieces. The control system can accommodate up to four handpieces. The control system includes A-dec's unique fatigue-reducing continental syringe; and may also be equipped with a low voltage water heater/heated syringe tubing, tooth dryer, electric handpiece, curing light and intra-oral light source.

Handpiece activation is automatic. When you pull the delivery arm from its resting position, the handpiece becomes active, allowing it to run when you press on the foot control disc.

Five autoclavable adjustment keys *(see Figure 1)* are provided for your use when making adjustments to the recessed controls. If the adjustment keys are ever lost or misplaced, you can use a 1/8-inch hex key instead. Additional or replacement keys may be ordered from your authorized A-dec dealer.

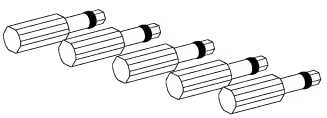


Figure 1. Autoclavable Adjustment Keys

Handpiece Controls

Coolant water flow and drive air pressure are individually adjustable for each handpiece. Coolant air flow control adjustment affects all handpieces. All handpiece controls are located on the sides of the unit. *Refer to page 13 and 14 for complete adjustment instructions.*

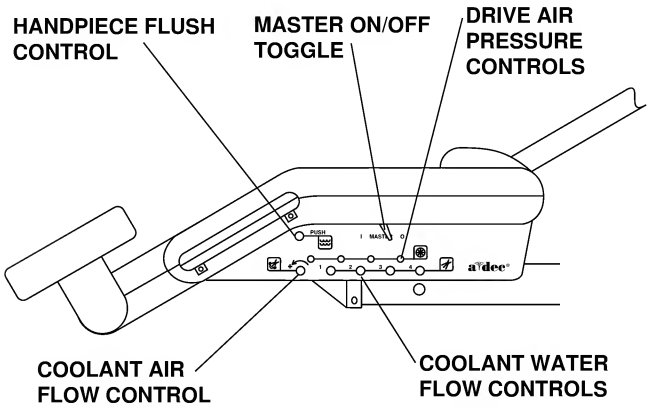
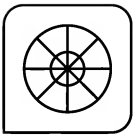


Figure 2. Handpiece Controls

I MASTER O **Master On/Off Toggle.** Turns on or off air, water, and electrical power to the control system.

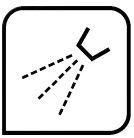
Caution

The MASTER ON/OFF TOGGLE should be in the OFF (O) position whenever the unit IS NOT in use. This will prevent the possibility of water damage should a leak occur wile the unit is unattended. Making sure the unit is OFF will also prevent the possibility of self-activation and the resulting burn-out of your electrical accessories.

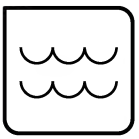


Drive Air Pressure Control. Used to adjust the drive air pressure to **each** handpiece. *Refer to page 14 for handpiece drive air pressure adjustment instructions.*

Coolant Air Flow Control. Used to adjust air coolant flow to **all** handpieces. Turn the control clockwise to decrease the flow, counterclockwise to increase. When turned fully clockwise, air flow is turned off.



Coolant Water Flow Controls. Used to adjust the flow of water coolant to **each** handpiece. Turn the control clockwise to decrease the flow, counterclockwise to increase.



Handpiece Tubing Flush Control. Used to flush system water through all the handpiece tubings. For complete flushing instructions, *refer to page 9*.

Oil Collector

The oil collector on your unit needs to be changed once a week for normal usage. Change more often for heavy use.

- Remove the oil collector jar from the unit and discard the old gauze (*refer to Figure 3*).
- Fold in quarters a new two-inch square gauze pad and place against the spring inside the jar.
- Screw the oil collector jar onto the unit. Do not overtighten.

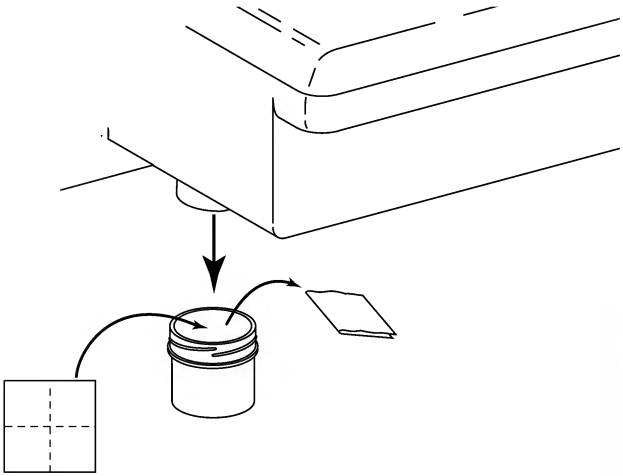


Figure 3. Oil Collector

Drive Air Pressure Gauge

The drive air pressure gauge (*see Figure 4*) indicates, in psi and kg/cm^2, the drive air pressure to the active handpiece.

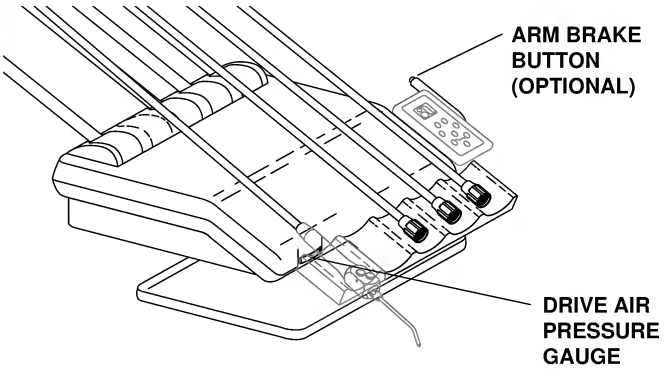


Figure 4. Drive Air Pressure Gauge and Arm Brake Button

Arm Brake

The arm is braked against vertical movement until you press the arm brake button (*see Figure 4*) or move the arm brake toggle (*see Figure 5*) to the OFF position. You then are able to position the control head. Releasing the arm brake button or moving the toggle to the ON position locks the control head in place

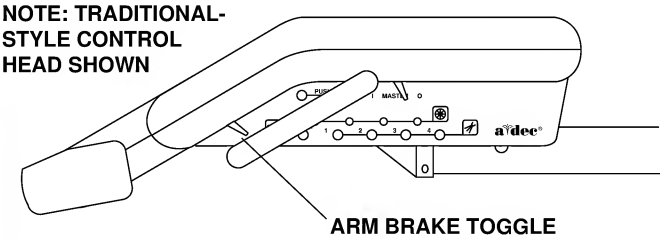


Figure 5. Arm Brake Toggle

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Handpiece Actuation

Handpiece actuation occurs when the handpiece is pulled forward and the arm passes approximately the 90° position (*see Figure 6*). To deactivate the handpiece, simply place the handpiece back on the handpiece pad.

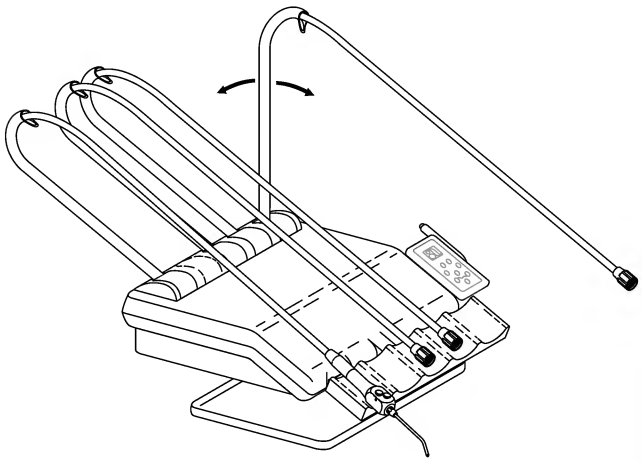

Figure 6. Handpiece Actuation

Touch Pad (optional)

For chair touch pad instructions, refer to the **Cascade 1040 Chair Owner's Guide**, *A-dec Publication No. 85.2605.00* or **Decade 1011/1021 Chair Owner's Guide**, *A-dec Publication No. 85.2635.00* depending on your model of chair.

For Master touch pad instruction, refer to your **Master Touch Pad Owner's Guide**, *A-dec Publication No, 85.2627.00.*

Foot Control

A valve inside the foot control modulates the drive air to the active handpiece, and provides an air signal that activates the coolant air and water flow. The foot control is operated by light foot pressure applied to any part of the foot control disc.

The foot control is equipped with a wet/dry toggle and, optionally, a chip blower button (*see Figure 7*). A unit equipped with a Master touch pad will not have a wet/dry toggle.

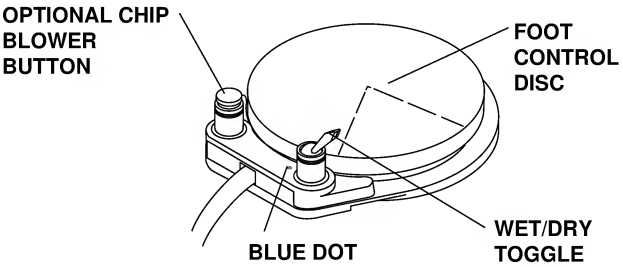

Figure 7. Foot Control

Wet/Dry Toggle. Allows you to shut off the coolant water to the handpiece without moving your hands from the oral cavity. Using your foot, move the toggle toward the blue dot to turn the coolant water ON; move it away from the dot to turn the water OFF.

Chip Blower Button *(optional).* Sends a jet of air through the handpiece when it is not running. It can alternatively be used to provide an air signal for such purposes as remote actuation of the cuspidor bowl rinse or cup filler.*

*Contact your authorized A-dec dealer for information on using the Chip Blower for other purposes.

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Handpiece Tubing Flush

Your Cascade Handpiece Control System is equipped with A-dec's unique handpiece flush system. The system flushes more water through the tubings in less time than is normally possible when operating the foot control only. The handpieces should not be connected when flushing the tubings.

How Often Should I Flush the Handpiece Tubings?

After each Patient:

Flush the tubings for 20-30 seconds

At the Beginning of Each Day:

Flush the tubings for 2-3 minutes

Flushing the Handpiece Tubings

Gather up all the handpiece tubings that use coolant water and hold them over a sink, cuspidor bowl, or basin. Be sure you hold the tubings so the water sprayed will be directed away from you and into the receptacle (see Figure 8).

Insert an adjustment key or a 1/8-inch hex key into the handpiece tubing flush control on the side of the control head (*see Figure 8*). Push in and hold the adjustment key for the appropriate time required, either for flushing between patients or flushing at the beginning of the day. Remove the adjustment key and replace the handpieces in their holders. Be careful to replace each handpiece into the proper holder.

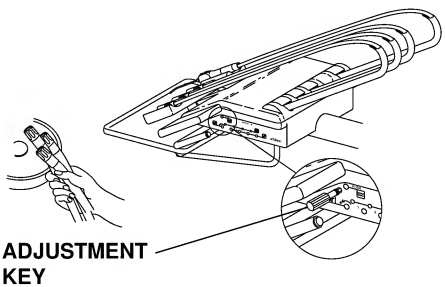

Figure 8. Handpiece Tubing Flush

Handpiece Dry Block Conversion

Your Cascade handpiece control system has one to four handpiece control blocks with coolant water to the handpiece. In some cases a control block without coolant water, a dry block, is required. If you require a dry block (*offering NO water to the handpiece*) on your hand piece control system, a dry block conversion kit has been included with your system.

Installing the Dry Block Conversion Kit

- Move the Master On/Off toggle to the OFF position. Bleed the system water by operating the syringe and flushing the handpiece tubings.
- Locate the handpiece control block position that will be the dry block. Access the control blocks underneath the control head.
- Using a 3/32-inch hex key, remove the small blue cartridge from the same control block. Install the small black cartridge from the dry block conversion kit into the control block *(see Figure 9)*.
- Using a 3/32-inch hex key, remove the large red cartridge from the control block. Install the large black cartridge from the dry block conversion kit into the control block (*see Figure 9*).
- Turn your handpiece control system ON, then check the function of the dry block handpiece conversion. A small amount of residual water may be discharged from the handpiece tubing but should dry after a few seconds.

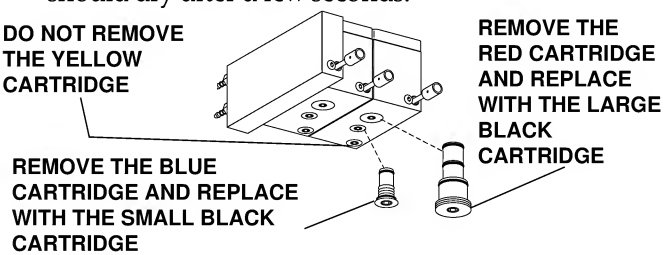
DO NOT REMOVE THE YELLOW CARTRIDGE
REMOVE THE RED CARTRIDGE AND REPLACE WITH THE LARGE BLACK CARTRIDGE
REMOVE THE BLUE CARTRIDGE AND REPLACE WITH THE SMALL BLACK CARTRIDGE

Figure 9. Handpiece Dry Block Conversion

Autoclavable Syringe

The syringe included with your Cascade Handpiece Control System is A-dec's Autoclavable Continental Syringe, featuring a three-way air and water system and a patented quick disconnect autoclavable tip system.

The operation, care, and maintenance of the syringe are discussed in your **Autoclavable Syringe Owner's Guide,** *(A-dec Publication No. 85.0680.00).*

Tray Holder

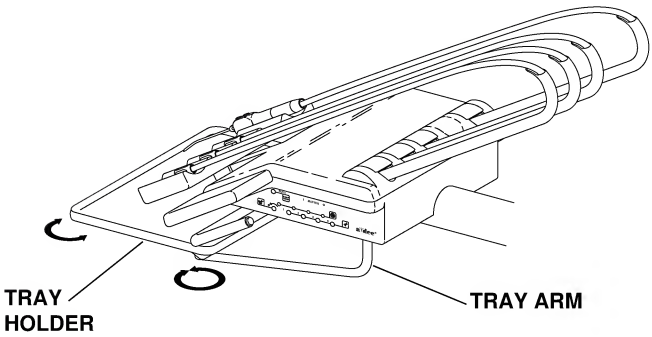

Figure 10. Tray Holder

For maximum flexibility in tray positioning, the tray holder can be pivoted 270°, and the tray arm can be rotated a full 360° under the control head *(see Figure 10).* The tray holder should be adjusted so that it rotates easily, yet maintains its position while instruments are removed and replaced.

Tray Holder/Tray Arm Tension Adjustments

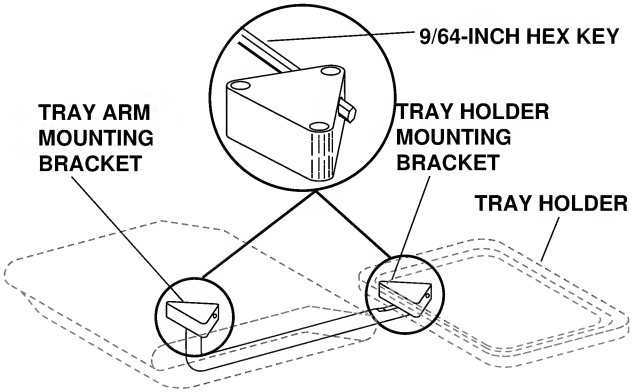

Figure 11. Tray Holder/Tray Arm Adjustment

To adjust the tray holder or tray arm, insert a 9/64-inch hex key through the appropriate mounting bracket *(see Figure 11)*. The hex key should protrude from the opposite side of the mounting bracket. If it does not, rotate the holder or arm until the key slides through the mounting bracket. While holding the bracket stationary, turn the holder or arm clockwise to increase the tension or counterclockwise to loosen the tension.

Routine Adjustments

Handpiece Coolant Adjustment

You will need an adjustment key or 1/8-inch hex key to complete these adjustments.

1. Install a bur in the handpiece.
2. Locate the coolant air flow control on the control head *(see Figure 2 on page 3)* and the wet/dry toggle on the foot control *(see Figure 7 on page 8)*.
3. Move the wet/dry toggle to the OFF position.
4. Insert an adjustment key into the air coolant control and turn clockwise until the valve seats. Turn counterclockwise 1 1/2 turns.
5. Insert an adjustment key into the coolant water control for the handpiece requiring adjustment and turn the control clockwise until it seats softly.
6. Move the wet/dry toggle on the foot control to the ON position.
7. While running the handpiece at medium speed, use an adjustment key to adjust the handpiece coolant water control until a fine mist is visible around the bur. Adjust the air and water until the desired mist is produced.
8. Repeat steps 1, 5, 6, and 7 for each additional handpiece.

If you are unable to obtain proper air and coolant water flow, contact your authorized A-dec dealer for assistance.

Handpiece Drive Air Adjustment

You will need a 3/32-inch hex key to complete this adjustment.

The drive air control must be adjusted to meet the handpiece manufacturer's *maximum dynamic* drive air pressure specification.

1. Install a bur in the handpiece.
2. Locate the drive air gauge on the front of the unit *(see Figure 4 on page 6)* and the drive air controls on the side of the unit *(see Figure 2 on page 3)*.
3. Insert the hex key into the drive air control for the handpiece requiring adjustment.
4. With the foot control disc fully depressed, turn the drive air control clockwise until the valve seats. Turn the drive air control counterclockwise until your handpiece is running at slightly above the specified drive air pressure; then, turn the control clockwise until the handpiece is running at the specified drive air pressure.
5. **Do not** turn the control counterclockwise beyond the point where the drive air pressure no longer increases. The control adjustment screw may come completely out of the unit.
6. Repeat Steps 1 through 5 for each handpiece.

If you are still unable to obtain proper drive air pressure, contact your authorized A-dec dealer for assistance.

Handpiece Control Positioning

A-dec's handpiece control and flexible arm system is designed to provide flexibility in positioning of the handpiece control.

The handpiece control and flexible arm system is configured for over-the-patient delivery at the factory.

Trans-Thorax Positioning

Refer to Figure 12 when converting the handpiece control and flexible arm system for trans-thorax positioning.

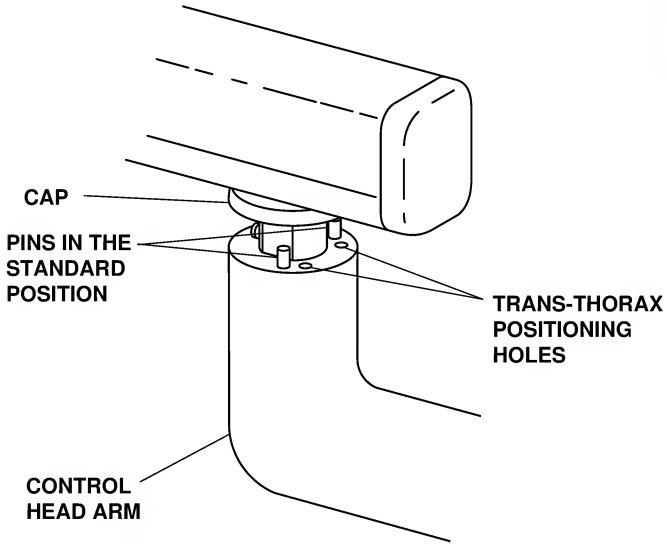

Figure 12. Trans-Thorax Positioning

1. Lift the cap at the top of the control head arm.
2. Use needle nose pliers to remove one of the pins from th;e standard position and replace it in the hole nearest it. The pin moved will depend on if you are practicing right-hand or left-hand dentistry.

Flexible Arm

A-dec's flexible arm system is designed for side delivery and over-the-patient delivery of the handpiece control. The arm allows vertical and horizontal positioning of the control head to suit your practice.

The arm is braked against vertical movement until you release the arm brake *(refer to page 6)*. If the arm tends to rise or drop when the brake is released, refer to the adjustment instructions below.

Counterbalance Spring Adjustment

The flexible arm contains a spring that counterbalances the weight of the control head. The arm also contains a friction mechanism to stabilize the arm at the upper and lower extremes of its vertical arc.

If the arm tends to rise or drop when the arm brake is released, the counterbalance spring needs adjustment.

1. Remove the flexible vinyl cover from the underside of the arm *(see Figure 13)*. Gently pull the tubing and wiring in the arm slightly aside.

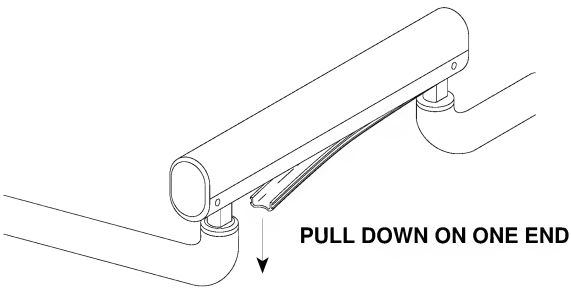

Figure 13. Flexible Arm Vinyl Cover

2. Raise the control head end of the flex arm until the friction adjustment socket head screw is accessible through the access hole in the arm *(see Figure 14)*.

   Use a 5/32-inch hex key to loosen the friction adjustment screw.

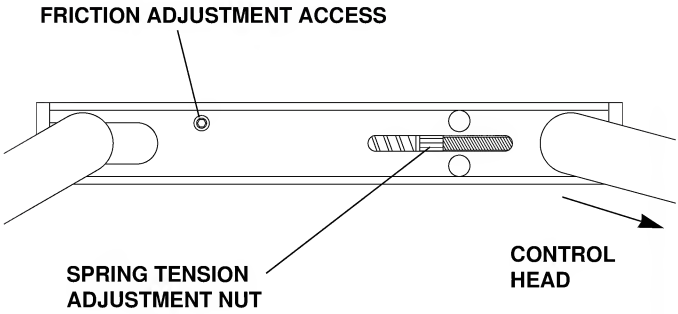

Figure 14. Spring Tension Adjustment

3. If the arm tends to drop, use a flat-blade screwdriver to turn the spring tension adjustment nut clockwise (as viewed from the control end of the arm) *(see Figure 15 on page 18)*. If the arm tends to rise, turn the adjustment nut counterclockwise.

   While adjusting the spring tension, frequently move the arm through its vertical arc to see if it is adjusted properly.

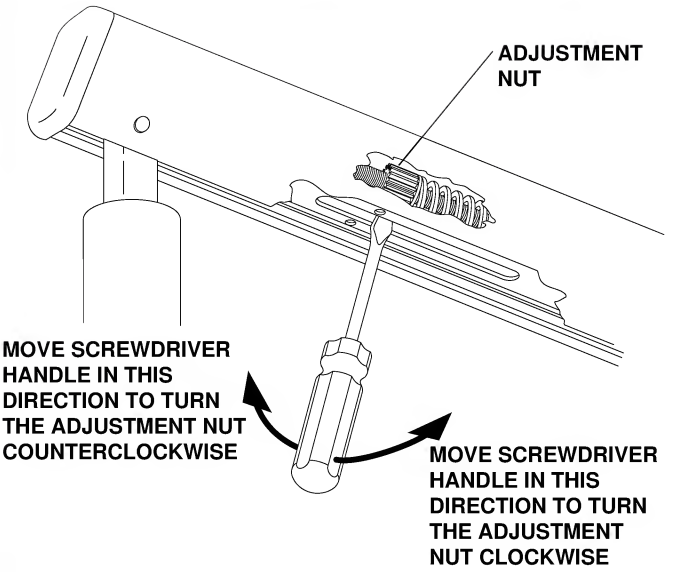
ADJUSTMENT NUT
MOVE SCREWDRIVER HANDLE IN THIS DIRECTION TO TURN THE ADJUSTMENT NUT COUNTERCLOCKWISE
MOVE SCREWDRIVER HANDLE IN THIS DIRECTION TO TURN THE ADJUSTMENT NUT CLOCKWISE

Figure 15. Spring Tension Adjustment

4. When you are satisfied with the spring tension adjustment, move the arm alternately to the full up and full down positions, releasing the control head at each position. If the arm drops or rises when you let go of it, tighten the friction adjustment. Be careful not to overtighten the adjustment or you may damage the friction mechanism.
5. Reinstall the flexible vinyl cover. The cover is easily snapped into place. Start by inserting one end of the cover into the arm and press it into place along the bottom of the arm.

Arm Stop Adjustment for Left/Right Conversion

Lift the cap, between the rigid arm and flexible arm *(see Figure 16)*. Use a 3/32-inch hex key to remove the stop assembly. Rotate the flexible arm so the threaded hole is on the other side of the pin and reinstall the stop assembly.

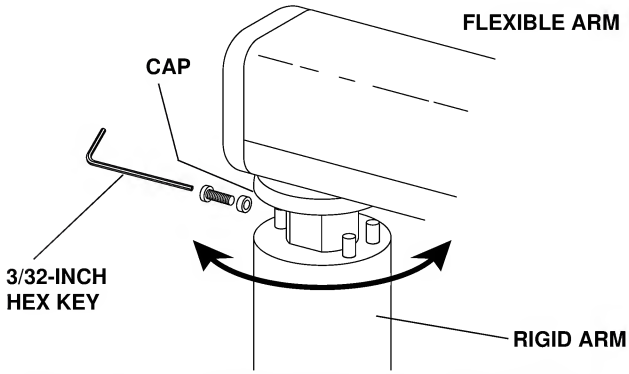

Figure 16. Flexible Arm Stop Adjustment

Lift the cover, at the base of the rigid arm, from the top of the post box *(see Figure 17)*. Use an 1/8-inch hex key to remove the stop assembly. Rotate the rigid arm so the threaded hole is in the opposite slot. Reinstall the stop assembly.

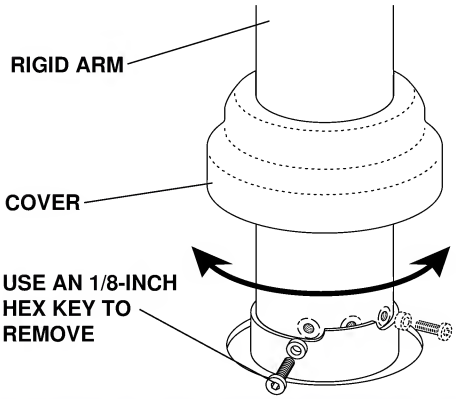

Figure 17. Rigid Arm Stop Adjustment

System Air and Water Pressure Adjustments

For system air and water pressure adjustments, refer to your **Floor Boxes Owner's Guide**, *A-dec Publication No. 85.2611.00*.

Care Instructions

For recommended asepsis instructions, refer to your **Equipment Asepsis Owner's Guide**, *A-dec Publication No. 85.0696.00*.

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Master Touch Pad
Owner's Guide 85.2627.00

Delivery System Control Head Load Capacity
10 lbs.(4.54 kg)–typical vertical load on tray to overcome the arm brake.

Weight of optional attachments:
Curing Light: 3 lbs. (1.36 kg)
Scaler: 2 lbs. (.91 kg)
Intra-Oral Light Source: 1 lbs. (.45 kg)
Tooth Dryer: 1 lbs. (.45 kg)
Touch Pad: .5 lbs. (.23 kg)

Minimum air, water, and vacuum service requirements for proper unit operation:

Air: 2.50 cfm (70.80 l/min) at 80 psi (551 kPa).
Water: 1.50 gpm (5.68 l/min) at 40 psi (276 kPa).
Vacuum: 12 cfm (339.84 l/min) at 8 inches (27 kPa) of mercury.

Specifications are subject to change without notice.

Identification of Symbols

Recognized by Underwriters Laboratories Inc. ® with respect to electric shock, fire and mechanical hazards only in accordance with UL 2601-1. Recognized with respect to electric shock, fire, mechanical and other specified hazards only in accordance with CAN/CSA C22.2, No. 601.1.

UL listed to US (UL 544) and Canadian (CAN/CSA C22.2, No. 125) safety standards.

Classified by Underwriters Laboratories Inc. ® with respect to electric shock, fire and mechanical hazards only in accordance with UL 2601-1. Classified with respect to electric shock, fire, mechanical and other specified hazards only in accordance with CAN/CSA C22.2, No. 601.1.

Conforms to European Directives *(refer to Declaration Statement)*

Protective earth (ground).

Functional earth (ground).

Attention, consult accompanying documents.

TYPE B APPLIED PART.

CLASS II EQUIPMENT.

Classification of Equipment (EN 60601-1)

Type of shock protection:
CLASS I EQUIPMENT
(Dental Chairs, Dental Lights, & Power Supplies)
CLASS II EQUIPMENT
(Chair, Wall, & Cart Mounted Delivery Systems)

Degree of shock protection:
TYPE B APPLIED PART (All products)

Degree of protection against water ingress:
ORDINARY EQUIPMENT (All products)

Mode of operation
CONTINUOUS OPERATION
(All models except Dental Chairs)

Mode of operation
CONTINUOUS OPERATION
WITH INTERMITTENT LOADING (Dental Chairs)

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